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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,340	03/02/2005	Willibald Schurz	S3-02P14928	8945
24131	7590	11/02/2006	EXAMINER	
LERNER GREENBERG STEMER LLP			AGUIRRECHEA, JAYDI A	
P O BOX 2480			ART UNIT	
HOLLYWOOD, FL 33022-2480			PAPER NUMBER	
			2834	

DATE MAILED: 11/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/526,340

Applicant(s)

SCHURZ ET AL.

Examiner

Jaydi A. Aguirrechea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-15 and 22 is/are rejected.
- 7) ☒ Claim(s) 16-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/02</u> | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
2. Please note, that the Specification must not refer to specific claims.
3. In claim 19, "inner electrodeson the other side" should read "inner electrodes on the other side".

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 13-15 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over Schuh. (US 6528927) in view of Heinz (US 6765337).

Schuh discloses a piezoelectric actuator (1), comprising: a stack of a plurality of individual piezoelectric actuator elements disposed between inner electrodes and selectively contracting and expanding along a main oscillation direction in dependence on an applied electric voltage; first and second metallization strips (22) alternating connection with said inner electrodes (14, 15); first and second outer electrodes (16) respectively fixed to said first and second metallization strips for electrically contacting the piezoelectric actuator; said outer electrodes having at least one region configured for compensating for length variations of the

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piezoelectric actuator in a main oscillation direction by an elastic deformation thereof substantially exclusively in a plane parallel to the main oscillation direction (summary of the invention), said outer electrodes having a comb-shaped profile (figure 2A, 2B).

However, Schuh fails to disclose the external electrodes having a meander-form and contact teeth for contacting said metallization strips projecting from said conductor plate; and first and second connection elements respectively connected to said first and second outer electrodes for externally contacting the piezoelectric actuator.

Heinz discloses an outer electrode having a meander form (20) and the extensions contact the metallization strip (3). The electrode 20 is soldered to the outer electrodes in order to secure the connection between the inner and the outer electrodes. Heinz invention has the purpose of providing a reliable connection between the inner and outer electrodes even in the event of cracks.

Therefore, it would have been obvious at the time of the invention was made to have an external electrode having a meander form in order to provide a secure and reliable connection even in the event of crack formations.

Regarding claim 14, meander-form conductor plate being tapered along a principal axis is shown in Heinz's figure 1.

Regarding claim 15, Schuh discloses the teeth being parallel to one another.

Regarding claim 22, the electrode as disclosed in Heinz, are made from brass, a bronze alloy.

***Allowable Subject Matter***

6. Claims 16, 17-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The references of the Prior Art of Record fail to teach or suggest either alone or in obvious combination the limitations as set forth in claim 16, and specifically comprising the limitation of the outer electrodes are bent by an angle  $\alpha < 90^\circ$  parallel to a first, straight end region of said contact teeth, for fixing to the piezoelectric actuator.

Regarding claims 17-20, the references of the Prior Art of Record fail to teach or suggest either alone or in obvious combination the limitations as set forth in claim 17, and specifically comprising the limitation of outer electrodes being mechanically fixed to the piezoelectric actuator by way of an adhesive and said contact teeth are left free of the adhesive for soldering to said metallization strips.

Regarding claim 21, the references of the Prior Art of Record fail to teach or suggest either alone or in obvious combination the limitations as set forth in claim 21, and specifically comprising the limitation of the actuator comprising an adhesive completely covering the piezoelectric actuator.

***Conclusion***

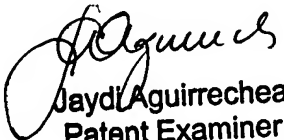
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaydi A. Aguirrechea whose telephone number is 571-272-2018. The examiner can normally be reached on M-Th 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on 571-272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JAA  
10/27/06

  
Jaydi Aguirrechea  
Patent Examiner